



# ICAO ENGINE EXHAUST EMISSIONS DATA SHEET

## SUBSONIC ENGINES

ENGINE IDENTIFICATION: BR700-710A1-10      BYPASS RATIO: 4.2  
 UNIQUE ID NUMBER: 3BR001      PRESSURE RATIO ( $\pi_{00}$ ): 24.3  
 COMBUSTOR:  
 ENGINE TYPE: MTF      RATED THRUST ( $F_{00}$ ) (kN): 65.6

### REGULATORY DATA

CHARACTERISTIC VALUE:	HC	CO	NO <sub>x</sub>	SMOKE NUMBER
D <sub>p</sub> /F <sub>00</sub> (g/kN) or SN	6.6	73.5	45.6	14.2
AS % OF ORIGINAL LIMIT	33.7	62.3	51.5	53.4
AS % OF CAEP/2 LIMIT (NO <sub>x</sub> )			64.3	
AS % OF CAEP/4 LIMIT (NO <sub>x</sub> )			72.6	
AS % OF CAEP/6 LIMIT (NO <sub>x</sub> )			78.0	
AS % OF CAEP/8 LIMIT (NO <sub>x</sub> )			88.4	

### DATA STATUS

- PRE-REGULATION  
 x CERTIFICATION  
 - REVISED (SEE REMARKS)

### TEST ENGINE STATUS

- NEWLY MANUFACTURED ENGINES  
 x DEDICATED ENGINES TO PRODUCTION STANDARD  
 - OTHER (SEE REMARKS)

### EMISSIONS STATUS

x DATA CORRECTED TO REFERENCE  
 (ANNEX 16 VOLUME II)

### CURRENT ENGINE STATUS

(IN PRODUCTION, IN SERVICE UNLESS OTHERWISE NOTED)  
 x OUT OF PRODUCTION (DATE: - )  
 - OUT OF SERVICE (DATE: - )

### MEASURED DATA

MODE	POWER SETTING (%F <sub>00</sub> )	TIME (minutes)	FUEL FLOW (kg/s)	EMISSIONS INDICES (g/kg)			SMOKE NUMBER
				HC	CO	NO <sub>x</sub>	
TAKE-OFF	100	0.7	0.707	0.00	0.52	17.07	11.0
CLIMB OUT	85	2.2	0.588	0.03	0.66	13.93	8.7
APPROACH	30	4.0	0.220	0.04	4.24	8.20	0.0
IDLE	7	26.0	0.089	1.98	26.09	4.00	0.2
LTO TOTAL FUEL (kg) or EMISSIONS (g)			299	279	3913	2576	-
NUMBER OF ENGINES				1	1	1	1
NUMBER OF TESTS				3	3	3	3
AVERAGE D <sub>p</sub> /F <sub>00</sub> (g/kN) or AVERAGE SN (MAX)				4.3	59.9	39.3	11.0
SIGMA (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)							
RANGE (D <sub>p</sub> /F <sub>00</sub> in g/kN, or SN)				3.83-5.03	57.89-63.69	38.09-40.51	10.18-11.87

### ACCESSORY LOADS

POWER EXTRACTION 0 (kW) AT - POWER SETTINGS  
 STAGE BLEED 0 (% CORE FLOW) AT - POWER SETTINGS

### ATMOSPHERIC CONDITIONS

BAROMETER (kPa)	101.5-102.1
TEMPERATURE (K)	291.2-300.3
ABS HUMIDITY (kg/kg)	0.0074-0.0087

### FUEL

SPEC	AVTUR
H/C	1.94
AROM (%)	16.5

MANUFACTURER: Rolls-Royce Deutschland  
 TEST ORGANIZATION: BMW Rolls-Royce GmbH  
 TEST LOCATION: Dahlewitz  
 TEST DATES: 05/06/1996-06/06/1996

### REMARKS

1. Data from certification report E-TR403/96-(FR) ISS02

Compliance with Fuel Venting requirements: - ('x' if complies, 'PR' if pre-regulation, '-' if information is not available)